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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,888	11/26/2003	Shigehiro Yamada	275412001900	9345

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EXAMINER	
LAVARIAS, ARNEL C	

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,888	YAMADA ET AL.	
	Examiner	Art Unit	
	Arnel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/16/04,11/26/03*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-12* is/are rejected.

7)☒ Claim(s) *2,13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings were received on 1/26/03. These drawings are acceptable.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. *It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.*

4. The abstract of the disclosure is objected to because of the following informalities:

Abstract, line 1- 'The object of the invention is to provide an' should read 'An'

Abstract, line 11- delete 'A'.

Correction is required. See MPEP § 608.01(b).

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

6. Claims 5-14 is objected to because of the following informalities:

Claim 5 recites the limitations 'a second optical assembly' and 'a second optical element' in lines 2-3. However, neither a first optical assembly nor a second optical element has been previously recited in Claim 1. For purposes of examination, these limitations have been interpreted to mean 'a first optical assembly' and 'a first optical element'.

Regarding Claim 6, the phrase "can be" (See line 5) renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. Claims 7-14 are dependent on Claim 6, and hence inherit the deficiencies of Claim 6.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 1, 3-5, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Ohyama (U.S. Patent No. 6366548).

Ohyama discloses an optical pick-up apparatus (See for example Figures 3-5, 8-9) comprising a light source for emitting laser light in two wavebands (See 5, 8, 9 in Figures 3-4); a light-receiving element for receiving laser light which is emitted from the light source and is reflected by an optical recording medium (See for example 3a, 3b, 4a, 4b in Figures 3-4); and a grating (See for example 13 or 14 in Figures 3, 8; col. 11, line 9-col. 12, line 39) having polarization characteristics between the light source and the optical recording medium by which the laser light emitted from the light source and being incident is transmitted without diffraction when a polarization direction for the laser light is equal to a predetermined first polarization direction and also by which the laser light emitted from the light source and being incident is diffracted when a polarization direction for the laser light is equal to a predetermined second polarization direction, the optical pick-up apparatus performing (See Abstract; col. 2, line 59-col. 6, line 67) at least one of processes for reading information of the optical recording medium and recording information on the optical recording medium by irradiating the optical recording medium by the laser light emitted from the light source on the optical recording medium, and the polarization directions of the laser lights in the two wavebands being orthogonal with each other on a position on which the laser light is incident on the diffraction grating (See Figure 8, where the incident light at 780 nm has TE polarization and incident light at 635 nm has TM polarization). Ohyama further discloses the light source emitting the first and second polarization directional laser lights which are parallel to each other (See Figure

9); a first/second optical assembly (See 12, 13, 14 in Figures 3-5, 8-9), including a first/second optical element, disposed between the light source and the optical recording medium, provided with a hologram (See for example 13 or 14 in Figures 3, 8; col. 14, lines 61-65) for diffracting incident light on a first surface portion and spectrally splitting the incident light to a plurality of lights and provided with the diffraction grating (See for example 13 or 14 in Figures 3, 8) on a second surface portion, and a light source unit (See for example 2, 5, 8, 9, 3a, 3b, 4a, 4b in Figures 3-4) having the light source and the light-receiving element; and the hologram of the first optical element is a polarizing hologram having polarization characteristics by which the laser light emitted from the light source and being incident on the hologram is not diffracted and is transmitted (See 13 or 14 in Figures 3, 8; col. 14, lines 61-65).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 6, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al. (WO00/36597).

Kajiyama et al. discloses a semiconductor laser apparatus (See for example Figures 1, 6-7, 10) comprising a light source for emitting laser light in a plurality of wavebands (See for example 1A, 1B in Figures 1, 6-7); an optical axis conversion mirror for changing a

traveling direction of laser light emitted from the light source and provided with a half wavelength plate for changing a polarization direction for laser light in one of wavebands (See 3, 4 in Figures 1, 6-7, 10; Page 5, line 29-Page 6, line 21); and a light-receiving element for receiving reflected light of laser light which is emitted from the light source and is transmitted in one direction (See for example 9 in Figures 1, 6-7, 10). Kajiyama et al. does not explicitly disclose the light source being installed such that polarization directions of the plurality of laser lights emitted therefrom are parallel to each other. However, it is noted that in the operation of the device of Kajiyama et al., the emitted laser lights from sources 1A and 1B (See for example Figures 1, 6-7) must pass through a polarization beam splitter (See 3 in Figures 1, 6-7). As is known in the art, such polarization beam splitters must pass one particular polarization and reflect an orthogonal polarization. Thus, if the emitted laser lights from sources 1A and 1B are to arrive at the optical disk (See 11, 110 in Figures 1, 6-7), these emitted laser lights must both have the same polarization to pass through polarization beam splitter 3. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the light source be installed such that polarization directions of the plurality of laser lights emitted therefrom are parallel to each other, for the purpose of maximizing the amount of light incident onto the optical disk.

11. Claims 7-8, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al.

Kajiyama et al. discloses the invention as set forth above in Claim 6, except for the half wavelength plate being a birefringent crystal thin plate or an anisotropic resin film.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the half wavelength plate be a birefringent crystal thin plate or an anisotropic resin film, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability for the intended use. One would have been motivated to have the half wavelength plate half wavelength plate be a birefringent crystal thin plate or an anisotropic resin film, to take advantage of the low cost and wide availability for such birefringent materials. *Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945).*

12. Claims 9, 11, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al. in view of Nakanishi et al. (U.S. Patent No. 5748658), of record.

Kajiyama et al. discloses the invention as set forth above in Claim 6, except for the light source and light receiving element being mounted either on a resin base provided with a lead or a silicon substrate. However, Nakanishi et al. teaches conventional optical pick up head (See for example Figures 4-10), wherein the light source (See for example 40 in Figures 6-7) and the light receiving element (See for example 51 in Figure 7) may both be located on the same base or substrate (See for example 41, 42 in Figures 6-7), such as a silicon or resin base or substrate (See col. 4, lines 50-62; col. 5, line 45-col. 6, line 44). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the light source and light receiving element be mounted either on a resin base provided with a lead or a silicon substrate, as taught by Nakanishi et al., in the laser apparatus of Kajiyama et al., for the purpose of reducing the

size, weight, and cost of the laser apparatus, while retaining excellent rigidity and reliability.

13. Claim 10, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al. in view of Nakanishi et al.

Kajiyama et al. in view of Nakanishi et al. discloses the invention as set forth above in Claim 6, except for the light source and the light receiving element being mounted on a metal pedestal, a lead kept under a condition electrically insulated from the pedestal being attached to the pedestal, and the lead being arranged so as to extend in a direction parallel to a direction of an optical axis converted by the optical axis conversion mirror. However, Nakanishi et al. further teaches that the light source and the light receiving element in the laser apparatus (See for example 62, 66 in Figure 14) may be mounted on a metal pedestal (See 45 in Figure 14), a lead (See for example 43b in Figure 14) kept under a condition electrically insulated from the pedestal being attached to the pedestal (It is noted that lead 43b is attached to the pedestal/lead 45 via bonding wire to element 65 and 64 in Figure 14), and the lead being arranged so as to extend in a direction parallel to a direction of an optical axis converted by the optical axis conversion mirror (Lead 43b is parallel to the light emitted from source 62 prior to arriving at turning mirror in element 64. It is additionally well known in the art that the leads may include a 90 degree bend, or any other degree of bending, such that the lead 43b may also be parallel to the light emitted from the source 62 after striking the turning mirror in element 64). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the light source and the light receiving element be

mounted on a metal pedestal, a lead kept under a condition electrically insulated from the pedestal be attached to the pedestal, and the lead be arranged so as to extend in a direction parallel to a direction of an optical axis converted by the optical axis conversion mirror, as additionally taught by Nakanishi et al., in the laser apparatus of Kajiyama et al. in view of Nakanishi et al., for the purpose of reducing the package size of the laser apparatus.

14. Claim 12, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiyama et al. in view of Nakanishi et al.

Kajiyama et al. in view of Nakanishi et al. discloses the invention as set forth above in Claim 11, except for the optical axis conversion mirror being formed by processing the silicon substrate. However, Nakanishi et al. further teaches (See Figure 11) that fold or turning mirrors (See 63 in Figure 11B) may be integrated as part of the base or substrate of the optical system, wherein the fold or turning mirror is formed by processing the silicon base or substrate (See col. 7, line 59-col. 8, line 35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optical axis conversion mirror be formed by processing the silicon substrate, as additionally taught by Nakanishi et al., in the laser apparatus of Kajiyama et al. in view of Nakanishi et al., for the purpose of reducing the size of the laser apparatus, while simplifying optical alignment since neither the mirror nor the emission source are moved during or after formation of the mirror on the substrate.

Allowable Subject Matter

15. Claims 2, 13-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Claim 2 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest an optical pick-up apparatus, as generally recited in Claim 1-2, the optical pick-up apparatus including, in combination, a half waveplate being arranged between the diffraction grating and the light source so as not to have an effect on a polarization direction for the second polarization directional laser light and so as to change a polarization direction for the first polarization directional laser light.

Claim 13 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest a semiconductor laser apparatus, as generally set forth in Claims 6 and 13, the semiconductor laser apparatus including, in combination, a polarization diffraction grating having polarization characteristics by which diffraction efficiency for laser light in an predetermined first polarization direction is greater than diffraction efficiency for laser light in a second polarization direction orthogonal to the first polarization direction.

Claim 14 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest a semiconductor laser apparatus, as generally set forth in Claims 6 and 14, the semiconductor laser apparatus including, in

combination, a hologram for diffracting reflected light of laser light transmitted in one direction into a direction of the light-receiving element, the hologram having polarization characteristics by which diffraction efficiency for laser light in a predetermined first polarization direction is greater than diffraction efficiency for laser light in a second polarization direction orthogonal to the first polarization direction.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6574182 to Yamada et al.

Yamada et al. is the U.S. patent publication which is based on the WO2000/36597 A1 publication to Kajiyama et al.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arnel C. Lavarias
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5/31/05